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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/194,560	03/29/99	LEIJON M	705/71509-2/

MMC2/0223

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EXAMINER	
ENAD, E	
ART UNIT	**PAPER NUMBER**
2834	

DATE MAILED: 02/23/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/194,560	Leijon et al.
Examiner	**Group Art Unit**
Enad, Elvin	2834

☒ Responsive to communication(s) filed on *Jan 5, 2001* .

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-24* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-24* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- *SEE OFFICE ACTION ON THE FOLLOWING PAGES* ---

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 10,23 and 24 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support in the specification that the winding is comprised of a "flexible" cable.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Brem et al. (USP 4,638,199) in view of Elton et al. (USP 5,036,165).

Brem et al. disclose the claimed invention except for utilizing a conductor cable having at least two semiconducting layers. Brem et al. disclose a turbo-generator comprising a stator having a core made of a stack of laminations, laminated compression plates clamped together by

means of tie plates and tension bolts. In figures 7 and 8, Brem et al. disclose the tie plates **3** constructed as tie segments **3'** extending over several axially extending holes **6** for tension bolts **8**. In addition, the laminated stator body **1** and the compression plate **2** have holes **14** for cooling the stator axially.

Elton et al. teach that it is known to use an electrical cable provided with an internal grading layer of semi-conducting pyrolyzed glass fiber layer in electrical contact with a cable conductor. In an alternate embodiment, Elton et al. teach having an electrical cable provided with an exterior layer of internal grading layer of semi-conducting pyrolyzed glass fiber layer in contact with an exterior cable insulator having a predetermined reference potential. Furthermore, Elton et al. teach that it is known to provide a semiconducting layer in the insulation of a conductor and to connect that layer to a fixed potential in order to provide an equipotential surface on the conductor preventing corona discharge around the conductors.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used an electrical cable similar to the one disclosed by Elton et al. as winding conductors to the stator as disclosed by Brem et al. since such a modification according to Elton et al. would provide a cable that prohibits development of corona discharge and maintain a substantially uniform and equal electric potential over the surface of the conductor.

5. With regard to claims 16 and 17, note figure 6 of Brem et al. whereby a pressure pad **13** is inserted between the compression plate and the tie plate to pre-stress the laminated stack.

6. With regard to claim 21, it would have been obvious for the inner semiconductor layer or the outer semiconductor layer to have a substantially the same coefficient of thermal expansion with the insulation in order to prevent cracking and to reduce strain.

7. Claims 10,22 and 23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Brem et al. (USP 4,638,199) in view of Elton et al. (USP 5,036,165) and Shildneck (USP 3,014,139).

Brem et al. and Elton et al. disclose the claimed invention except for a particular teaching of having the winding comprised of a flexible cable.

Shildneck teaches that it is known to have an improved continuous winding for an electromagnetic device such as a large turbine-driven generator, the winding employing an improved form of flexible insulated conductor for the laminated armature core of the dynamoelectric machine. In column 2, lines 28-31, Shildneck teaches that the rigidity of the conductor bars depend on the type of insulation used.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used a flexible cable as taught by Shildneck to the device as disclosed by Brem et al. since such a modification according to column 2, lines 54-59 of Shildneck would provide an improved method for winding the laminated core of a large dynamoelectric machine.

Response to Arguments

8. Applicant's arguments filed on January 05, 2001, have been fully considered but they are not persuasive. Applicant provided various arguments as to why the combination of the cited references, Brem et al. and Elton ('165), were not obvious, since the references fail to teach or to suggest motivations to combine. Applicant asserts that Elton ('165) disclose only a transmission and distribution cable and that Elton et al. ('565), the parent application which is incorporated by reference, disclose generally the use of semi-conducting layer for insulated electrical conductors in three distinct embodiments. Moreover, applicant argues that in Elton et al. ('565) the conductors of the dynamoelectric machine are referred to exclusively as "windings" or "bars", and when referring to an electrical cable for carrying high voltage, Elton et al. ('565) refer to the conductors as "cable" not a "winding" or "bar". Applicant concludes that when the disclosure is taken together, the conductor designated in Elton et al. ('165) relates to an electrical cable for transmission and distribution of electrical power and not for a winding for a dynamo electric machine. Applicant further argues that these are separate applications utilizing a common component and that Elton et al. (1'65 and '565) do not teach the cable and the winding to be interchangeable.

Examiner disagrees with applicant's argument and contends that Elton et al. ('165) provide a teaching or suggestion for using his cable arrangement for dynamo-electric machines applications.

It is important to note that the thrust of the invention of Elton et al. ('165 and '565) is the use of a semi-conducting layer material with an insulated conductor. This is why Elton et al. ('565) provided three distinct embodiments utilizing a semiconducting layer, namely, in windings of a dynamoelectric machine, electrical cables and electrical housing surrounding a digital electronic equipment. In all applications, Elton et al ('565) teach that when the semiconducting layer is in electrical contact with an electrical ground, the layer prohibits the development of a corona discharge and bleeds off any electric charge developed on the exterior surface of an insulated conductor, (see column 7 lines 64 through column 8, lines 1-25).

In the art of motors, and as recognized by Elton et al. ('165), the problem of corona discharge in dynamo electric machines is commonly known and ever present. Elton et al. ('165) describes this problem in the background of the invention (column 1, lines 15-35) that corona discharge develops whenever an electrical potential exists between the conductor and the region adjacent the exterior surface of the insulator. The stationary armature core are generally made of laminations which define circumferentially spaced radial slots opening into the bore. Disposed in the slots are heavily insulated electrical windings causing a high electrical potential to exists between the windings or armature bars and the members of the stator defining the slots which are at an electrical ground. Accordingly, when the semiconducting layer is in electrical contact with the electrical ground, the layer prohibits the development of corona discharge and bleeds off any electric charge developed on the exterior surface of an insulated conductor.

Since other variations of dynamoelectric machines (such as Siemens, Shildneck utilize a rounded cable) for its windings in the stator core slots, why would one skilled in the art not use the semiconducting layers and modify the existing cable? Or why would one skilled in the art utilize a cable similar to that one disclosed by Elton et al. ('165)? It is noted that Elton et al. teach that the number of semiconducting layers applied to a winding may vary depending on the design requirements.

Moreover, applicant's argument limiting the use of the electrical "cable" for electrical transmission and distribution only is not well understood. As defined by Webster's II New Riverside University dictionary, a cable is "a bound or sheathed group of mutually insulated conductors". The windings in the dynamoelectric machine, including those for high voltage applications, use these type of conductors for electrical transmission.

Examiner disagrees with applicant's argument that the cable of Elton et al. ('565) is stiff due to the presence of the semiconducting layer made of pyrolized glass layer. The rigidity of a conductor cable primarily depends on the type of insulation used. Shildneck for instance, in column 2, lines 28-30 teaches that the rigidity of the conductor bars depend on the type of insulation used. Shildneck uses silicone-rubber for his flexible cable. Moreover, as is known in power cables, flexibility primary depends upon the use of ethylene-propylene (EPM) and ethylene-propylene-diene (EPDM) rubbers as insulation rather than of the semi-conducting layer.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elvin Enad whose telephone number is (703) 308-7619. The examiner can normally be reached on Monday-Friday from 8:00AM to 4:00PM.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez, can be reached on (703) 308-1371. The fax phone number for this Tech Center group is (703) 305-3431(32).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Elvin Enad
Primary Examiner
Art Unit 2834
02.14.2001